as in the case of Manouvriez, where a broncho-pneumonia appeared in the beginning, and was heralded two or three days in advance by convulsions.

Pleuro-pneumonia as a complication of varicella is illustrated by an observation of Rille, who found it in an infant of nine months, and by another of Abercrombie, who at the autopsy upon a case of gangrenous varicella found a double pneumonia with a pleural exudate upon one side.

Finally, he reports an observation of Semtchenko relative to the autopsy upon a female infant of eleven months, who succumbed to a purulent pleurisy beginning three days after the complete disappearance of a varicellous eruption.

FURTHER STUDIES ON INDICANURIA.

To complete our review of the literature bearing upon the value of the so-called Hochsinger's sign in tuberculosis of children (see AMERICAN JOURNAL OF THE MEDICAL SCIENCES, October, 1894, p. 492), reference must be made to two recent publications.

GEHLIG (*Jahrbuch f. Kinderheilkunde*, 1894, xxxviii, p. 285) gives the following conclusions based upon a considerable number of observations upon children both sick and well:

1. Nurslings in good health or children fed upon sterilized milk, and not the subjects of digestive troubles, sometimes present a trace of indican in the urine.

2. If digestive disturbances occur almost always some indican is found, its quantity varying with the gravity of the affection. In chronic catarrh of the intestine, cholera, and typhoid fever, it is particularly marked.

3. In older children without digestive trouble the urine normally contains indican. If the diet includes a high proportion of nitrogenous food (eggs, meat), indican becomes more abundant.

4. There exists no relation between tuberculosis and a more or less marked indicanuria.

CIMA (*Transactions International Congress of Rome*, 1894) gives the results of examinations in sixty-eight cases. Most of these children were fed simply on bread and milk, some on bouillon, vegetables, and eggs, and others on mother's or cow's milk.

1. Cases of clinically declared tuberculosis of abdominal or thoracic organs—ten cases. Almost all had some irregularity of digestion, and the stools were mostly liquid or semi-fluid. In ninety-nine analyses sixty-nine, or 69.69 per cent., gave positive reactions, while medium or very marked reactions were given in nearly half, or 45.5 per cent. In these same cases very marked reactions were obtained after some days of feeding upon a diet richer in albuminoids, or during constipation. On the other hand, the reaction was slight or feeble when the children were put upon milk or had liquid or semi-fluid stools.

2. Cases suspected of tuberculosis, with adenopathy, chronic catarrh of intestines, or intermittent catarrh of bronchi—twenty-three cases. In seventy-three analyses, 75.34 per cent. positive reactions, or 46.57 per cent. of medium or marked reactions.

3. Cases of divers acute and chronic diseases—thirty-five cases. In eighty-eight examinations thirty-eight were without reaction, while 30 per

cent. of medium or marked reaction were given for the most part by children over two years of age nourished on a mixed diet.

The conclusion from these results is that the indican reaction in the urine is more positively connected with anomalies of digestion, especially in mixed feeding, than with the principal malady. Consequently indican has no other diagnostic importance than that of indicating the degree of decomposition of albuminoid substances in the intestines.

PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF

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IMMUNITY: NATURAL AND ARTIFICIAL.

THE recent development of our ideas regarding immunity is traced in an interesting paper by BUCHNER, read before the Eighth International Congress of Hygiene and Demography at Buda-Pesth (*Münch. med. Woch.*, 1894, Nos. 37 and 38), in which the essential differences between the natural immunity of certain animals to bacterial influences and the immunity artificially conferred by experiment are emphasized. The elaborate argument embodying the results of the investigations of the past three years is summed up in the following conclusions:

1. The natural power of resisting infection, the so-called natural immunity, depends upon distinctly different conditions and causes from the artificially induced immunity. They are, therefore, essentially different conditions, which, from the scientific standpoint, should be kept quite distinct from one another, and investigated each for itself, although practically they may be coexistent in the same individual.

2. Natural immunity depends, on the one hand, on the bactericidal action of certain substances in solution in the organism, the so-called *alexines*, or, on the other hand, on an inherited insusceptibility of the tissues and cells of the body to the several bacterial poisons. This natural immunity cannot, as a rule, be transmitted to the body of another animal by means of the blood.

3. The leucocytes play an important rôle in the protection of the body by natural immunity, not as phagocytes, but through the action of soluble substances secreted by them. Phagocytosis is only a secondary function.

4. Artificial or acquired immunity depends on the presence of modified specific bacterial products, the so-called *antitoxines*, either in the blood, in the tissues, or in both. By transfer of the blood these specific antitoxines can be transmitted to another organism, thereby conferring upon it artificial immunity.

5. The action of the antitoxines does not depend upon destruction of the specific bacterial poisons by contact with them, but occurs only in the animal